IN THE CLAIMS

Please amend claims 1 through 3 and 5 through 17 by this amendment as follows:

1. (Currently Amended) A label switching router having an internal channel share function over an asynchronous transfer mode, comprising:

an ingress forwarding engine adapted to set up a label switched path by using a signaling protocol, extract an egress forwarding engine number <u>of an egress forwarding engine</u> and an ~~internal~~ <u>egress</u> channel identifier <u>that identifies an egress channel</u>, allocate an extension tag <u>that comprises said egress forwarding engine number and said egress channel identifier</u>, search a previously-set internal channel <u>that connects the ingress forwarding engine to the egress forwarding engine</u>, form a forwarding information base/label information base ~~comprising the~~ <u>that comprises the extension tag and a</u> previously-set internal channel identifier <u>that identifies said previously-set internal channel,</u> ~~and the extension tag~~, add a header having the <u>previously-set</u> internal channel identifier and <u>the</u> extension tag to a received ~~internet protocol~~ <u>Internet Protocol (IP)</u> packet by referring to the forwarding information base/label information base, and forward the ~~internet protocol~~ <u>IP</u> packet; and

a merging unit adapted to receive label switched path set information from ~~a peer~~ <u>the ingress</u> forwarding engine, form an extension information base/merging table [[where]] <u>wherein</u> ~~an internal~~ <u>the egress</u> channel identifier is mapped to [[an]] <u>the</u> extension tag, perform merging [[when]] <u>upon</u> receiving [[an]] <u>the</u> ~~internet protocol~~ <u>IP</u>

1 packet having the extension tag, extract the extension tag, ~~mapping~~ <u>map</u> the extension tag

2 to the ~~internal~~ <u>egress</u> channel identifier, and forward the ~~internet protocol~~ <u>IP</u> packet to ~~an~~

3 ~~internal~~ <u>the egress</u> channel ~~having the mapped internal channel identifier~~.

1 . 2. (Currently Amended) The label switching router of claim 1, the <u>ingress</u>

2 forwarding engine being controlled by a main control unit, the main control unit being

3 programmed .and configured to set up the label switched path by using the signaling

4 protocol, extract the egress forwarding engine number and the <u>previously-set</u> internal

5 channel identifier stored ·in the forwarding information base/label information base,

6 allocate the extension tag according to the set label switched path, and store the

7 <u>previously-set</u> internal channel identifier and the allocated extension tag in the

8 forwarding information base/label information base, wherein the <u>ingress</u> forwarding

9 engine comprises:

10 the forwarding information base/label information base for storing and managing a

11 destination ~~internet protocol~~ <u>IP</u> address, the <u>previously-set</u> internal channel identifier, the

12 extension tag and a label;

13 an SAR receiving unit for reassembling the received ~~internet protocol~~ <u>IP</u> packet,

14 and outputting the reassembled ~~internet protocol~~ <u>IP</u> packet;

15 a lookup control unit for adding the header having the <u>previously-set</u> internal

16 channel identifier, the extension tag and the label to the ~~internet protocol~~ <u>IP</u> packet by

17 referring to the forwarding information base/label information base, and outputting the

18 ~~internet protocol~~ IP packet; and

19 an SAR transmitting unit receiving the ~~internet protocol~~ IP packet having the

20 previously-set internal channel identifier and the extension tag from the lookup control

21 unit, confirming the previously-set internal channel identifier, and forwarding the

22 ~~internet protocol~~ IP packet to the previously-set internal channel ~~identifier~~.

1 3. (Currently Amended) The label switching router of claim 1, the merging unit

2 being controlled by a main control unit, the main control unit being programmed and

3 configured to receive the label switched path set information from the [[peer]] ingress

4 forwarding engine, and form the extension information base/merging table where the

5 ~~internal~~ egress channel identifier is mapped to the extension tag, wherein the merging

6 unit comprises:

7 an extension information base/merging table mapping the ~~internal~~ egress channel

8 identifier to the extension tag, and storing the mapped ~~internal~~ egress channel identifier;

9 an SAR receiving unit reassembling the received IP packet, and outputting the

10 reassembled ~~internet protocol~~ IP packet;

11 a lookup control unit programmed and configured to add the header having the

12 ~~internal~~ egress channel identifier mapped to the extension tag to the ~~internet protocol~~ IP

13 packet by referring to the forwarding information base/label information base, and output

14 the ~~internet protocol~~ IP packet; and

15 an SAR transmitting unit confirming the ~~internal~~ egress channel identifier in the

16 lookup control unit, and forwarding the ~~internet protocol~~ IP packet to the ~~internal~~ egress

17 channel ~~identifier~~.

1   4. (Original) The router of claim 1, the extension tag being indicative of a

2   destination IP address from the merging unit.

1   5. (Currently Amended) The router of claim 1, wherein packets originating from

2   different sources and going to a common destination handled by the router are transferred

3   to said common destination via a single previously-set internal channel.

1   6. (Currently Amended) The router of claim 5, said single previously-set internal

2   channel is shared by packets from different sources to transmit packets to said common

3   destination.

1   7. (Currently Amended) The router of claim 5, wherein only one previously-set

2   internal channel is [[used]] allocated to deliver packets to a given destination handled by

3   said router.

1   8. (Currently Amended) The router of claim 1, where only one previously-set

2   internal channel is used to handle all packets of said router having a common extension

3   tag.

1   9.   (Currently Amended)   A method [[for]] of sharing [[an]] a previously-set

2 internal channel by using a label switching router over an asynchronous transfer mode,

3 the method comprising:

4   setting up a label switched path by using a signaling protocol, extracting an egress

5 forwarding engine number that identifies an egress forwarding engine and [[a]] an egress

6 channel identifier that identifies an egress channel, allocating an extension tag that

7 comprises the egress forwarding engine number and the egress channel identifier, and

8 forming a forwarding information base/label information base by using [[a]] the

9 previously-set internal channel by an ingress forwarding engine, the previously-set

10 internal channel connecting the ingress forwarding engine to the egress forwarding

11 engine;

12   adding a header ~~having~~ comprising the extension tag and a previously-set internal

13 channel identifier that identifies said previously-set internal channel ~~and extension tag~~ to

14 a received ~~internet protocol~~ Internet Protocol (IP) packet by referring to the forwarding

15 information base/label information base, and forwarding the ~~internet protocol~~ IP packet

16 by the ingress forwarding engine;

17   receiving label switched path set information from ~~a peer~~ the ingress forwarding

18 engine, and forming an extension information base/merging table where an ~~internal~~

19 egress channel identifier is mapped ~~in an~~ the extension tag at a merging unit; and

20   forwarding [[a]] the received ~~internet protocol~~ IP packet having the extension tag

21 to ~~an internal~~ the egress channel ~~having the internal channel identifier mapped to the~~

22 ~~extension tag~~ by referring to the extension information base/merging table at the merging

23 unit.

1   10. (Currently Amended) The method of claim 9, wherein the setting up a label

2 switched path by using a signaling protocol, extracting [[an]] the egress forwarding

3 engine number and [[a]] the egress channel identifier, allocating [[an]] the extension tag,

4 and forming [[a]] the forwarding information base/label information base by using [[a]]

5 the previously-set internal channel by [[an]] the ingress forwarding engine [[step]]

6 comprises~~:~~

7   ~~setting up the label switched path by using the signaling protocol;~~

8   ~~extracting the egress forwarding engine number and the egress channel identifier,~~

9 ~~and allocating the extension tag; and~~

10   searching the previously-set internal channel, ~~and forming~~ the forwarding

11 information base/label information base ~~having~~ comprising the previously-set internal

12 channel identifier and the extension tag.

1   11. (Currently Amended) The method of claim 9, wherein the adding a header

2 having the previously-set internal channel identifier and the extension tag to a received

3 ~~internet protocol~~ IP packet by referring to the forwarding information base/label

4 information base, and forwarding the ~~internet protocol~~ IP packet by the ingress

5 forwarding engine step comprises:

6 reassembling the received IP packet, and outputting the reassembled ~~internet~~

7 ~~protocol~~ IP packet;

8 adding the header having the <u>previously-set</u> internal channel identifier, the

9 extension tag and the label to the ~~internet protocol~~ IP packet by referring to the

10 forwarding information base/label information base ; and

11 confirming the <u>previously-set</u> internal channel identifier, and forwarding the

12 ~~internet protocol~~ IP packet to the <u>previously-set</u> internal channel ~~identifier~~.

1 12. (Currently Amended) The method of claim 9, wherein the forwarding a

2 received ~~internet protocol~~ IP packet having the extension tag to an ~~internal~~ <u>egress</u>

3 channel having the ~~internal~~ <u>egress</u> channel identifier mapped to the extension tag by

4 referring to the extension information base/merging table at the merging unit step

5 comprises:

6 performing merging ~~when an internet protocol~~ <u>upon receipt of the IP</u> packet having

7 the extension tag ~~is received~~;

8 extracting the extension tag, and mapping it to the ~~internal~~ <u>egress</u> channel; and

9 forwarding the ~~internet protocol~~ IP packet to the ~~internal~~ <u>egress</u> channel having the

10 mapped ~~internal~~ <u>egress</u> channel identifier.

1 13. (Currently Amended) The method of claim 9, the extension tag being

2   indicative of the ~~internal~~ egress channel the ~~internet protocol~~ IP packet is forwarded to

3   from the merging unit.

1   14. (Currently Amended) The method of claim 9, only one previously-set internal

2   channel is used to deliver all packets to a common destination.

1   15. (Currently Amended) The method of claim 9, only one previously-set internal

2   channel is set up to deliver packets having a common extension tag.

1   16. (Currently Amended) The method of claim 9, only one previously-set internal

2   channel is used to deliver packets to a single destination, even when the packets originate

3   from diverse ingress forwarding engines in the label switching router.

1   17. (Currently Amended) The method of claim 9, only one previously-set internal

2   channel is set up and serves as an only path to deliver packets from a plurality of ingress

3   forwarding engines in the label switching router to a single destination in the label

4   switching router.